

Remarks

The Examiner's reconsideration of the application is urged in view of the amendments above and comments which follow.

First of all, claim 1 has been corrected to remove an extraneous word which inadvertently remained when the claim was previously amended. Secondly, claim 8 has been rewritten in independent form, and is discussed in a bit more detail below.

In the Office Action, the Examiner had rejected claims 1, 3 and 6-11 under 35 U.S.C. §103 as being unpatentable over Domanik U.S. Patent No. 5,798,514 in view of Fink U.S. Patent No. 3,474,004. Reconsideration is requested.

Domanik is the primary reference upon which the Examiner relies in the Office Action. Domanik has been addressed in the Request for Continued Examination of April 6, 2005 and in responses prior thereto, but it appears that the previous arguments have been ignored. In any event, to make the record clear, the following is provided for consideration by the Examiner, which is partly redundant in view of previous arguments, but which adds considerably more, particularly in view of the citation of the Fink reference, which, it is submitted, is largely irrelevant.

Domanik shows a circular bar code on AST devices. There is, however, no mention of any numeral or letter code printed on the discs in addition to the bar codes, nor (judging by Figures 1 and 2) would there appear to be any sufficient space for such codes to be added (and to remain readable to a user).

Column 1 lines 47-53 of Domanik provides a discussion of problems of printing identifying characters on 6mm diameter discs, and of automatically reading randomly orientated codes.

The solution taught by Domanik is to replace the character codes with a circular bar code. Domanik therefore not only fails to disclose an AST disc having a code of one or more letters and one or more numerals (a feature of claim 1 of the present application), but also positively discourages the addressee from providing such a code on a disc.

In this connection, the previous Examiner argued that column 2 lines 19-22 of Domanik discloses a code of one or more letters and/or numerals. Those lines however refer to a code which provides identity and concentration information for the antibiotic. The code is not qualified as being a letter/numeral code, and it is in any case abundantly clear that the code is a bar code, which has been discussed earlier in Domanik and which replaces any letter/numeral code.

It is also pointed out that the bar code shown in Domanik is circular, and does not therefore have to be orientated in order to determine an optimal reading direction. The code does include an index mark for defining the start of the bar code. However, the reading direction is always circular and will be unaffected by the orientation of the code. Furthermore, column 1 lines 50-51 of Domanik states that each tooth (40) defines a radial position at which information is encoded. Thus even if the teeth (40) do constitute orientation markings, an assertion which the applicants do not accept for the reasons stated above, they would nevertheless not be separate from the code.

The problems of reading the information on a 6mm (AST) disk have been identified by Domanik at column 1 lines 47-63. Domanik thus dissuades the skilled addressee from selecting a code constituted by letters and numerals. The solution to the problem of providing information on a 6mm disk proposed by Domanik is to provide a bar code in preference to a method that continues to use character codes with automatic reading/correlation. The present invention shows this is unnecessary by using a novel method of interpreting character codes on the disk without the need to print a bar code (itself on dubious accuracy). Using the bar code system of

Domanik there appears to be only just enough space on the disk for the bar code let alone any extra numerals/letter codes.

Regarding claim 3, the tooth (40) that serves as an index mark in Domanik merely marks the start of the code, not the proper orientation of a correct reading direction. Applicants discuss the direction of reading of the code shown in Domanik below, but for the purposes of considering the index mark, believe that it would be useful to try and consider exactly which reading direction is identified by that mark.

A reading direction along the line of the mark is clearly wrong for the data printed at the other angular positions on the bar codes of Domanik, and would not yield any useful information (other than the existence of the index mark) at the angular position of the index mark.

As far as the reading direction of the codes shown in Domanik is concerned, the Examiner's attention is drawn to lines 49 and 50 of column 4, which state that "by convention codes are read in a clockwise direction from the index code". If the direction is clockwise, it must be circular (concentric with the centre of the code).

This is also consistent with the distinction drawn in Domanik between bar codes the subject of that document and "conventional" bar codes in which the bars in the form of concentric circles. Column 3 lines 19-22 states that such concentric circles are read circumferentially. However, if a code is constituted by an arrangement of concentric circles, a circumferential reading direction would yield no useful information: the reading direction would have to be radial for the concentric circles to yield any useful information.

Thus, for the purposes of Domanik, references to the codes being read "radially" are in effect references to a reading direction which is circular, centered on the centre of the code.

This construction of the term “radial” is further supported by lines 49-52 of column 3, which state that each tooth (40) defines a radial position at which information is encoded. However, column 4 lines 11-25 indicate that such a radial position can encode seven states dependent on the arrangement of the teeth (40, 45) at that position. Thus the teeth, in effect, define an angular position around the code at which one of seven states (defined by radially extending features at that angular position) is encoded. It follows that, although information in the bar code is encoded by means of radially extending features, the reading direction of the bar code of Domanik is circular, not linear and certainly not in any of the directions defined by the indexing mark for opposed pairs of teeth (40). By analogy, the vertical height of a lower case letter “l” is one of the features that distinguishes it from a lower case “i”, but the reading direction for those letters would nevertheless be horizontal not vertical.

It is clear therefore that the teeth of Domanik do not act as any means for defining a reading direction. The teeth do define angular positions around the code, but this is analogous to determining the start and finish of the circle around which the code is read, not the orientation of the circle.

Applicants do not agree with the previous reasoning claims 3-7 and strongly disagree with the rejection of 8 since there is no linearly arranged information in Domanik parallel to an optimal reading direction which is therefore also linear (the reading direction of Domanik is circular not linear). Claim 8 has been rewritten in independent form to emphasize this.

Applicants are unclear how the Examiner has determined, in the last paragraph on page 5 of his Action, that “it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Domanik’s invention to include printed lines, printed below or above a code as a linearly-arranged information for enabling an image analyzer to determine an optimal reading direction...”, just because “it is a standard fundamental procedure routinely implemented in image processing...” The use of such lines with Domanik’s invention appears to

be irrelevant, because the structure of the bar code is such that there appears to be no requirement to under or over line anything to orientate the code.

Furthermore, the introduction of Fink (US 3,474,004), even in conjunction with Domanik, appears tenuous. The Examiner cites Fink col. 5, lines 5-9 as evidence of machine readable information to mark the Antibiotic Disc. The marking is added to the plate (not the disc) for a “quick visual evaluation of several antibiotics” (col. 5, lines 7-8), presumably allowing several different antibiotics to be used on the same plate. At no point in Fink is there a direct mention of “machine readable information”. Simply marking antibiotic codes onto the discs alone is not the major issue, and combining this aspect of Fink together with Domanik (as the Examiner seems intent on doing-page 3, paragraphs 3-6) would not, lead anyone to the present invention.

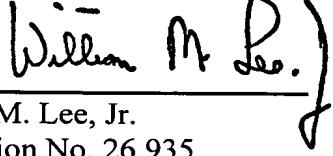
In view of the foregoing, it is submitted that the claims clearly distinguish from the prior art and are allowable thereover. The Examiner’s further and favorable reconsideration is urged.

If, for any reason, the Examiner remains unconvinced after having considered the above, an interview is requested. It is requested that the Examiner contact the undersigned in that regard before issuing a further Action.

As this response is being submitted during the fifth month following the Examiner's Office Action, an appropriate Petition for Extension of Time is also submitted herewith.

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Respectfully submitted,


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